

## OXISTAR

Accelerated ageing of rubber and Elastomeres



### Introduction

Testing oxidation stability of elastomeres, rubber and miscellaneous plastics, such as cable coatings, is described in the German DIN 53 508 or DIN VDE 0472 as well as in IEC 811-1-2; (method: pressure chamber). This test simulates the ageing behaviour of materials in

a short-term study. Materials are exposed to pure oxygen at 70°C, 21 bars or to air at 127°C / 150°C at 5.5 bars for one day or more in a pressure chamber. Mechanical properties, such as tensile strength and hardness, are examined before and after exposure. The results are placed in relationship to one another and the resulting characteristic number is a measure of the ageing behaviour.

This testing procedure is mainly required for coating materials of cables.

### Technical Description

The OXISTAR I and II was newly developed and completely meets DIN and IEC requirements. It replaces the ancient apparatus from the no longer existing company of Julius Peters.



The OXISTAR II is equipped with two TÜV-proofed pressure chambers, each having a 4 litre volume, which can be independently filled with air or oxygen. The pressure and the temperature of each chamber is electronically controlled. Therefore one chamber can be filled e.g. with oxygen and tempered at 70°C, 21 bars and the second with air at 127°C, 5.5 bars.

The OXISTAR I is delivered with one TÜV-proofed pressure chamber of 4 litre, and of course, pressure and temperature is electronically controlled.

Filling and venting is accomplished using capillaries which ensures low gas velocities.



The main advantage of the OXISTAR is its electronic temperature and pressure controls for each pressure chamber. Values are digitally set-up and displayed and can be registered via the standard 0-10 V port.

The temperature is measured directly in the pressure chamber by a PT100 probe. The electric heating is designed in such a way to attain an optimal temperature distribution. It is near the sample is  $\pm 1^\circ\text{C}$  at 70°C or  $\pm 2^\circ\text{C}$  at 150°C.

The pressure sensor measures the pressure directly in the chamber and can thus control any deviation at once.

### Security Devices

Temperature security devices of mechanical nature and burst discs prevent undesired rises in temperature and pressure.

### Options



Calibrated PT100 probes with calibration certificate can be delivered in connection with a portable temperature measuring device.

2 or 4- channel strip chart recorder

| Technical Data                    |                     |                       |
|-----------------------------------|---------------------|-----------------------|
| Part-No.                          | 2 Pressure chambers | 310-0001              |
|                                   | 1 Pressure chamber  | 310-0003              |
| Max. working pressure             |                     | 21 bar                |
| Oxygen pre-pressure               |                     | max. 25 $\pm$ 1 bar   |
| Pressed air pre-pressure          |                     | mind. 7 $\pm$ 0,5 bar |
| Proofed pressure                  |                     | 35 bar                |
| max. allowed temperature          |                     | 150 °C                |
| Control accuracy                  |                     | $\pm$ 0,2 °C          |
| Temp. distribution in the chamber | at 70°C:            | $\pm$ 1 °C            |
|                                   | at 150°C            | $\pm$ 2 °C            |
| Pressure sensor                   |                     | 0...25 $\pm$ 0,5% bar |
| Burst pressure of bursting disc   |                     | 32 $\pm$ 7,5% bar     |
| Heating power of each chamber     |                     | 330 VA                |
| Volume of chamber                 |                     | 4 l                   |
| Dimensions                        |                     | 87 x 66 (45) x 42 cm  |
| Weight                            |                     | 58 (42) Kg            |
| Main connections                  |                     | 230 $\pm$ 10% V       |
| Total power consumption           |                     | 720 (360) VA          |

Subject to alterations 3.1.002 10.00